August, 1952

CLINICAL MEDICINE

for the family physician

Garrett Pipkin, M.D.

Acid Control in Peptic Ulcer
...WITHOUT CONSTIPATION

Modern antacid therapy with alumina gel is usually successful. But in many cases constipation ensues.

Then you have the incongruous situation of the patient dosing himself daily with laxatives in addition to his regular alumina gel intake.

You can help nearly every patient avoid this disturbance by prescribing Gelusil. Unlike most alumina gel preparations, it is singularly free of constipating action.[1,2,3,4] Gelusil embodies a unique form of non-reactive aluminum hydroxide gel combined with magnesium trisilicate. It helps control gastric hyperacidity without causing constipation.

Prescribe Gelusil in liquid or tablets. Bottles of 6 or 12 oz.; boxes of 50 or 100 tablets.

---

1. *Seley, S. A.: Am. J. Dig. Dis. 13:238 (July) 1946.* 2. *Rossien, A. X.: Rev. of Gastroenterol. 16:34-52 (Jan.) 1949.* 3. *Rossien, A. X. and Victor, A. W.: Am. J. Dig. Dis. 14:226-229 (July) 1947.* 4. *Batterman, R. C. and Ehrenfeld, I.: Gastroenterol. 9:151 (August) 1947.*

Gelusil®

THE NON-CONSTIPATING ANTACID ADSORBENT

WILLIAM R. WARNER DIVISION OF WARNER-HUDNUT, INC. NEW YORK 11, N. Y.

TABLE of CONTENTS

59th year of publication

Vol. 59, No. 8 August, 1952

EDITORIAL

Sex Determination in Pregnancy 347
Frederic R. Stearns, M.D., Editor

ORIGINAL ARTICLES

Peyronie's Disease and It's Treatment 349
Oswald S. Lowsley, M.D.

Modern Treatment of Acne Vulgaris 354
Irwin L. Lubowe, M.D.

Milk Allergy in a Case of Triplets 362
Samuel Hillel Sobel, M.D.

Fractures in Children 365
Walter P. Blount, M.D.

DIAGNOSTIC SUGGESTIONS 372

THERAPEUTIC SUGGESTIONS 374

BOOK REVIEWS 376

NEW PHARMACEUTICAL PRODUCTS 378

Dr. Garrett Pipkin, Attending Orthopedic Surgeon at Kansas City General Hospital and St. Joseph Hospital was born in Kansas City, Missouri, in 1904. He is a graduate of Washington University Medical School, St. Louis, and holds a Master's Degree in Orthopedic Surgery from Temple University.

During World War II he was Chief of Orthopedics at Army and Navy General Hospital, Hot Springs, Arkansas, and then with the 106th Evacuation Hospital under General Patton.

Returning to private practice, he received a Certificate of Merit in 1949 from the American Medical Association for his scientific exhibit on developmental knee anatomy. He is an associate editor of the Jackson County Medical Bulletin and serves on the editorial boards of the Missouri State Medical Journal and Clinical Medicine. Dr. Pipkin is a member of the American College of Surgeons and the American Academy of Orthopedic Surgeons.

des

RECORDS *highest* FETAL SALVAGE

With **des** routine, Gitman and Kaplowitz[1] obtained 15 live births from 17 women with histories of one abortion — 88%.

And 3 live births from 3 women with histories of 3 abortions—100%—concluding that **des** is the "drug of choice" in these complications of pregnancy.

Ross[2], with similar **des** routine, brought all of 36 cases of threatened abortion successfully to term 100%. He concluded that "**des**, together with the recommended technique of its administration" is "the method of choice in the treatment of threatened abortion."

Karnaky[3] by the use of massive **des** dosage totalling 30 grams obtained living term infants from a woman who previously had six abortions — and a living infant by using 77 grams of **des** in a woman who had 13 previous abortions.

des 25 milligram tablets — highly micronized, triple crystallized diethylstilbestrol U.S.P. (Grant Process) — dissolve within a few seconds and are uniformly absorbed into the blood stream.

des 25 milligram tablets are available in containers of 30 and 100 tablets.

NOW AVAILABLE

NEW des potencies for massive dosage therapy.

des 50 mg. micronized diethylstilbestrol tablets

des 100 mg. micronized diethylstilbestrol tablets

REFERENCES:

1. Gitman, L., and Kaplowitz A.: Use of diethylstilbestrol in complications of pregnancy. New York State J. Med. 50:2823: 1950.
2. Ross, J.S.: Use of diethylstilbestrol in the treatment of threatened abortion. N. Nat. M.A. 43:20, 1951.
3. Karnaky, K.J.: Am. J. Obsts. & Gynec. 58,622. 1949.

For further information, reprints and samples, write Medical Director

GRANT CHEMICAL COMPANY, INC.

95 MADISON AVENUE, NEW YORK 16, NEW YORK

EDITORIAL

Sex Determination in Pregnancy

FREDERIC R. STEARNS, M.D., *Editor*

Sex determination during pregnancy has always been a wish of the expectant mother, and has been probably a question very frequently asked the family physician. Recently Gustav W. Rapp and Garwood C. Richardson published a test for determining the sex of the fetus during pregnancy (Science, 115:265, 1952). (Richardson previously had presented a test based on the presence of free female sex hormones in the urine of pregnant women.) Rapp and Richardson studied saliva, tears and perspiration of pregnant women in order to see whether body fluids other than urine would give a similar result as Richardson found in the urine. The investigators showed that, in scrutinizing 376 women, the test was positive in the saliva in the sixth or seventh month of pregnancy in 218 and negative in 3 when boys were born, and negative for 148 women, yet positive for 7, when girls were delivered. While the authors admit that the precise nature of the substance responsible for the positive test is not known, the practical result is apparently statistically significant.

In going over the literature, one finds a number of tests listed in publications of the last decade which are concerned with prenatal sex determination. One test is described in the Indian Medical Journal (62:238, 1942). Nine cc. of the urine of a pregnant woman are injected into the ear vein of a male rabbit of the age of two months. After 48 hours the testes of the rabbit are microscopically examined. If they are enlarged and display hypertrophy, when the cells appear proliferated and exhibit spermatogenesis, the fetus is considered to be female. If the testes are normal in histological appearance, the fetus is supposed to be male. According to the Indian Medical Journal, the test had reliable results in 80 out of 85 pregnant women. Another procedure is depicted in the London journal 'Nature' (194:300, 1942). In differentiation to the just mentioned test, this test is applicable only in the first trimester of pregnancy. The basic idea is that the testes of a male fetus may cause a noticeable rise of the androgen level in the blood of the mother. A male fetus allegedly produces a ketosteroid excretion of 20 mg. or more per 1,000 cc. On the other hand, never more than 19.8 mg. per 1,000 cc. of maternal blood could be established in pregnancies from which female infants were delivered. A third test was mentioned in the Far Eastern Science Bulletin (3:52, 1943). This test is founded on the amount of protease, due to fetal testicular function, in the urine of pregnant women. Protease cannot be detected before the fourth month of

pregnancy; yet, as the quantity of protease increases with progressing gestation, in employing Florkin's micromethod, the amount of protease in the maternal urine can be reliably measured from the fifth month on. The quantity of protease in pregnancies with a male fetus was 0.15 mg. and over per 100 cc. of urine within the fifth month and 20 mg. and over after the beginning of the sixth month of pregnancy. The test effected positive results in 87 per cent of a total of 86 women; however, the publication cautions that in women who have fever or who suffer from tuberculosis the test is not reliable. Nieburgs Kupperman, and Greenblatt from the University of Georgia School of Medicine have pointed to two tests for sex determination prediction. A biochemical test determines the relation of the two kinds of female hormones; FSH and LH are both produced by the pituitary gland; and excess of LH favors the assumption that the fetus is male. The second test is a histological examination of the endometrium; from the types of cells found the authors predict the sex of fetus; the prediction was accurate in 85.4 per cent of cases.

Which one of the outlined procedures is the most practical one and which of them ultimately will render the most reliable results, is still an open question. As all depends, directly or indirectly, on hormone assay methods, it appears that the time will not be too far when a trustworthy prediction as to the sex of the offspring during pregnancy can be made.

Centennial of American Pharmaceutical Association

One hundred years ago was founded one of the outstanding professional organizations in this country. In 1852, the pharmacists of the United States, alarmed by the adulterated and impure drugs then being imported from abroad, banded together to prevail upon Congress to pass legislation in order to regulate the standards of drugs and to safeguard the health of the population.

Under the leadership of Dr. William B. Procter, Jr., dean of the Philadelphia College of Pharmacy and Science, the American Pharmaceutical Association came into being. Charged with maintaining the high professional standards of pharmacy, the American Pharmaceutical Association has performed its task well. The last century has seen great progress in all the medical sciences, and pharmacy justly deserves the eminent position it holds on the medical team.

CLINICAL MEDICINE congratulates the American Pharmaceutical Association on its one-hundredth birthday, and, as pharmacists from every branch of pharmacy gather in Philadelphia to hold their annual convention, we predict that the years to come will be even more fruitful in their contributions to the health and well being of our people.

Peyronie's Disease and Its Treatment

Best results in treatment of this fairly common condition have been obtained by surgical means.

OSWALD S. LOWSLEY, M.D., F.A.C.S., F.I.C.S.

From the Oswald Swinney Lowsley Foundation, Inc., of St. Clare's Hospital, New York, New York

Plastic induration of the penis (Peyronie's disease), once regarded as a rare condition, is now being diagnosed with relative frequency. The disease is characterized by fibrous infiltration which begins in the septum between the corpora cavernosum in any part of the organ and later may extend, usually in uneven plaques, into Buck's fascia and the tunica albuginea on either side. The asymmetric distribution of the fibrosis causes painful angulation or deformity of the erect penis, making coitus difficult or impossible, and the psychic effect of this is even more distressing than the actual physical discomfort.

The disease was first described in a treatise on factors influencing delayed ejaculation by F. de la Peyronie in 1743—hence the name by which it is popularly known. In 1950 the present author and Dr. William H. Boyce reviewed a series of 50 consecutive cases operated upon by the author's original operation, and at that time found a total of 1248 cases reported in the literature.

CAUSE

Although many theories have been advanced as to the cause of Peyronie's disease, the etiology remains unknown. Earlier writers believed the condition to be a fibrosis of inflammatory origin, or part of a generalized disease of the vascular system—frequently but not always of syphilitic origin.

Our own experience with a considerable number of cases throws no new light on the etiology. Of the 50 patients whose cases were thoroughly reviewed, 23 gave a history of gonorrhea and 4 had Dupuytren's contracture. Serological tests for syphilis were negative in all but one, and there was no unusual incidence of arthritis, gout, diabetes, or chronic inflammatory disease.

PATHOLOGY

The lesion is characterized by hyperplastic induration of the tunica albuginea, intercavernous septum, and deep (Buck's) fascia of the penis. The induration occurs as a cord or as one or more plaques or nodules, of firm or even cartilaginous consistency, on the dorsal aspect of the penis. It originates in the midline, most frequently near the coronary sulcus or the symphysis pubis, lying below the dorsal vessels and nerves, and slowly progresses to involve part or all of Buck's fascia and the sheath of

Lowsley, O. S. and Boyce, W. H.: Further experiences with an operation for the cure of Peyronie's disease. J. Urol., 63: 888, 1950.

one or both corpora cavernosa, but rarely the cavernous bodies. The induration, which are sharply circumscribed, quite thick, and usually irregular in shape, are readily palpated both during erection and when the penis is flaccid. The overlying skin is normal and readily movable. In over half of our cases one or more plaques extended the length of the penis, from the termination of the corpora cavernosa beneath the coronal sulcus to their point of separation beneath the pubic arch. Multiple plaques were usually connected by some degree of thickening of the intervening fascia.

Microscopically, the desmoid thickening of the fascia shows but few small blood vessels and many spindle-like cells. Smaller than fibroblasts, these cells have the same general appearance and are most numerous about the capillaries and smaller blood vessels. They are undifferentiated building cells which have the ability to develop into connective tissue, or into cartilage or bone by metaplasia. These metaplastic changes are more frequent in the older-age groups, and in our series were much more prominent in those who had received radiation therapy. In our cases, hyalin degeneration was quite marked in over 75 per cent of the patients, and was present in 86 per cent of men in the sixth decade of life. Calcium deposition occurred in 10, bone formation in 2, and cartilage in 1 case.

True plastic indurations show no tendency to spontaneous disappearance. Suppuration, ulceration, and malignant degeneration have not been reported.

SYMPTOMS AND DIAGNOSIS

Peyronie's disease usually occurs after middle life. Of the 50 patients referred to above, the youngest was 27 years, the oldest 69 years, and 61 per cent were over 50 years of age.

The most frequent complaints are of painful and difficult erections, a "lump" in the penis, deformity of the penis in the erect state, and interference with coitus.

The onset is insidious and the development slow, and curvature of the penis on erection is likely to be the first sign to attract the patient's attention. Pain on erection, varying from mild to very severe, is also a prominent symptom. As the fibrosis progresses, the induration becomes fixed and the deformity of the penis marked, making coitus impossible. Nervous manifestations, due to interference with a normal sex life, are common in the younger group of men. Over 35 per cent of our patients have been completely impotent, and in the remaining cases intercourse was unsatisfactory.

Noticeable deformity in the flaccid state is uncommon, the deviation occurring only when the penis is erect.

The degree and direction of the curvature depend upon the location, form, and extent of the fibrosis. The angulation is most often upward and backward, less often laterally (toward the side on which the induration is found), and in rare cases downward.

The diagnosis should be readily established from the history and clinical findings.

DIFFERENTIAL DIAGNOSIS

Peyronie's disease must be differentiated from inflammatory and traumatic scleroses, syphilitic gummas, the rare os penis, malignant tumors, and benign tumors such as fibroma, keloids, and chondroma, which also are very rare.

Indurations of the urethral wall and corpus spongiosum are so painful on manipulation that differentiation is relatively easy. Syphilitic gummas on the penis are uncommon, the Wassermann test will be positive, and they respond to anti-

luetic therapy. Malignant neoplasms are usually painless, but metastasis to the inguinal nodes occurs so early that by the time the patient reaches the physician these are general palpable. Fibromas steadily increase in size, whereas Peyronie's disease remains practically stationary for long periods, sometimes years at a time.

TREATMENT

Many different forms of nonoperative treatment have been utilized from time to time, including electrolysis, diathermy, and other electrical treatments, the injection of fibrolysin, and the administration of iodides and sex hormones—none of which has proved beneficial.

I am convinced that radiation should not be used in cases of Peyronie's disease. In the first place, this lesion is entirely different from keloid disease, which does show softening by radiation. The patholigical changes appear to be analogous to Dupuytren's contracture and thus are not ordinarily affected favorably by roentgen therapy. Secondly, all radiation produces degenerative changes such as edema, loss of nuclei, hyalinization, and the laying down of scar tissue. It has been our experience that patients who have not had radiation therapy heal more rapidly following operation than those who have been treated preoperatively by this agent. Six of our 8 patients who developed postoperative drainage from the wound, with delayed healing, were men who had received the most ionizing radiation of the 17 treated preoperatively by radium or roentgen applications. It is felt that the fibrosis secondary to radiation was an important factor in this delayed wound healing, as well as in delaying the development of an adequate blood supply to the autogenous fat transplant used in the repair of the wound.

The present author has had very gratifying results in a considerable number of cases of Peyronie's disease with the operation described below, and believes that surgery is the treatment of choice in this disease unless the plaques of induration extend too far laterally on Buck's fascia. In the latter cases, operation is not advisable as a new deformity of the penis is thereby created. Of the 50 patients in our reviewed series, operated upon by this method, 29 were cured and 10 markedly improved, and we have had additional successes since. The best results have been in cases where the fibrous tissue occupied a medial position dorsal or ventral to the corpora cavernosa (35 of the 39 patients who were either cured or markedly improved being in this group). The poorest results were in cases where the plaques extended to the lateral surface of the corpus cavernosum.

The operation was first presented in 1943 and subsequently improved. As originally performed, following removal of the fibrotic tissue of the septum between the corpora cavernosa, Buck's fascia was re-approximated by a continuous catgut suture. Subsequently the procedure was improved by the insertion of a free fat transplant to fill the defect. Further improvement—namely, not allowing the two edges of Buck's fascia to approximate one another, but having part of the fat intervening—has eliminated the distortion due to excessive scar formation in the approximated fascial planes, greatly improving the results. Other improvements are (1) sprinkling sulfanilamide powder over the wound to insure against infection of the fat area, and (2) placing gauze beneath the tourniquet to alleviate the adverse effects of the tied tourniquet.

TECHNIC OF OPERATION

The operation is done under spinal anesthesia.

Lowsley, O. S.: Surgical treatment of plastic induration of the penis (Peyronie's disease). New York State J. Med., 43: 2273, 1943.

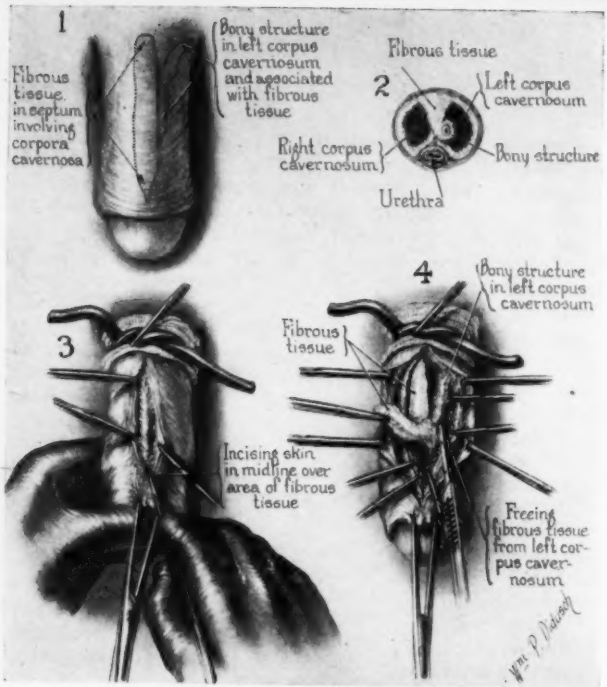

1
Bony structure in left corpus cavernosum and associated with fibrous tissue
Fibrous tissue in septum involving corpora cavernosa
2
Fibrous tissue
Left corpus cavernosum
Right corpus cavernosum
Bony structure
Urethra
3
Incising skin in midline over area of fibrous tissue
4
Bony structure in left corpus cavernosum
Fibrous tissue
Freeing fibrous tissue from left corpus cavernosum

Fig. 1

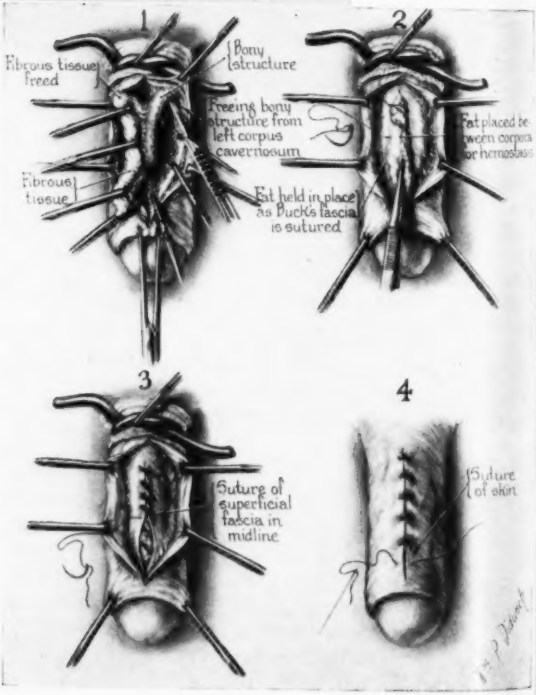

1
Fibrous tissue freed
Bony structure
Freeing bony structure from left corpus cavernosum
Fibrous tissue
2
Fat placed between corpora for hemostasis
Fat held in place as Buck's fascia is sutured
3
Suture of superficial fascia in midline
4
Suture of skin

Fig. 2

A block of subcutaneous fat, large enough to be more than adequate for the repair, is first obtained from the lower abdominal wall.

A protective layer of gauze is placed about the base of the penis, and a soft-rubber tourniquet is applied as near the base as possible and tightened with the minimum of pressure required to control arterial bleeding. The tourniquet is not kept in continuous application for more than 20 minutes.

A midline incision is made on the dorsal surface of the penis and carried down through the subcutaneous tissue to expose the indurated area, care being taken to avoid the dorsal veins. The fibrous plaques and associated fascial planes are isolated at the median point and the dissection continued both proximally and distally. The venules of the corpora cavernosa are carefully dissected from the fibrous tissue, every effort being made to preserve the continuity of as many of these vessels as possible. Care is taken completely to excise the areas of induration and the intervening connective tissue, and to leave as symmetrical a defect as possible in the fascial coverings of the corpora.

The block of fat is shaped to fit this defect and held in place by a continuous suture of No. 2 plain catgut, each stitch being placed through the tunica albuginea and Buck's fascia to include a bite of the adjacent fat transplant. Care is taken *not to approximate* the edges of these fascial planes, but to keep the fat firmly anchored between them.

The superficial fascia is then approximated over the fat transplant by a continuous suture of No. 0 plain catgut, holding the fat firmly in position. At this point the tourniquet is released. Any active bleeding is controlled by the application of fat, or by clamp and ligature.

The operative area is dusted lightly with sulfanilamide powder. The skin is closed with interrupted sutures of silk.

When the induration involves the ventral portion of the intercavernous septum, the above procedure is modified slightly. The initial incision is made in the ventral instead of the dorsal midline, and the dissection is carried around the urethra to expose the indurated area. Following removal of the fibrotic tissue, the defect is repaired with a fat transplant, as described above, and the urethra sutured over it.

Postoperatively, a light gauze bandage is placed over the incision, and gentle but not constrictive pressure is applied by one or two layers of elastic bandage. The penis is kept elevated by small pillows or by suspension from a cradle. The bandage is changed every two hours or oftener during the first 12 hours, to make certain that no constriction occurs from edema developing beneath it. The patient is allowed out of bed in 24 hours.

Stilbestrol, 12 mg. daily, is given during the period of hospitalization and for 10 days after the patient's discharge from the hospital, and adequately controls erections.

SUMMARY

Peyronie's disease is a fairly common condition the treatment of which, by a variety of nonoperative methods, including ionizing radiation has been admittedly unsatisfactory. The fact that a high percentage of our patients have been either cured or markedly improved by the operation described above encourages me to recommend this method of treatment of Peyronie's disease to the surgical profession. The operation is entirely safe. The use of fat prevents bleeding, and if Buck's fascia is carefully sutured, with a little fat between the unapproximated edges, no scar will result to contract later.

REVIEW ARTICLE

Modern Treatment of Acne Vulgaris

The causative factors of this disfiguring disease must be isolated and the conditions treated individually or with combined treatment.

IRWIN L. LUBOWE, M.D., F.A.C.A., *New York, New York*

The incidence of acne as observed by the dermatologists and general practitioners remains the most frequent type of skin disorder seen in practice. The specific etiology of acne vulgaris has not definitely been determined. However, great strides have been made in the last few years in evaluating the contributing and related factors.

Combes[1] re-emphasizes the following causal factors in the production of acne:

1. Endocrine dysfunction.
2. Dietary indiscretion.
3. Gastrointestinal disturbance.
4. Focal infection.
5. Allergic background.
6. Nutritional deficiencies.

Hamilton[2] states that despite the scientific correlation between acne and androgens, there is no fundamental proof that all forms of acne are caused by excessive secretion of androgenic substances.

Wile[3] suggested that complex hormonal disturbances may be a factor, but it is not the single component. He states, "The ratio of the daily excretion of androgen to that of estrogen for the normal man was found to be 8.9 whereas for the man with acne it was 19.8 more than twice as great."

The relationship between acne vulgaris and hypersecreting sebaceous glands has been excellently described by Sulzberger[4] and Witten, who demonstrated the estrogen androgen imbalance. This type of acne is usually observed in the early adolescent stage and there is also a definite premenstrual flare-up. In the female, it is associated with irregularity of menses, scant menses and dysmenorrhea. In the male, it is observed with an oily greasy skin and associated seborrheic dermatitis of the scalp. In the young male, estrogenic creams or lotions are very effective, and in the female stilbesterol and thyroid have been judiciously prescribed by Andrews.[5]

Phillip[6] treated eighty-four patients with adolescent acne vulgaris consisting of thirty-six male patients and forty-eight female patients. In the male, there was an effective result in thirty-three cases; and in the female there was a demonstrable effect in ten cases. He used an estrogenic acne lotion, in conjunction with hygienic routine measures. He supports the premise that in the male, topical cutaneous applications of estrogenic substances may be utilized to reduce the normal sebaceous activity associated with acne vulgaris.

However, he is unable to ascertain why this type of hormone preparation seems to be more effective in the male than in the female.

We have utilized Premarin Cream, Sharestrin Cream, and Acnestrol Lotion. These preparations contain estrogenic substances in water dispersable bases.

Shapiro[7] conducted an exhaustive investigation of adolescent acne which appeared at puberty. He used a vanishing cream containing 2.5 mg. of sodium estrone sulphate in 1 Gm. of water dispersable cream, Premarin. The preparation was applied to the soap washed face two to four times daily, and gradually reduced to one application daily, and subsequently every day. Patients were observed over a period of four months. He reports that during the first two weeks of therapy, no marked change was noted. However, after six weeks, improvement became finally established; and after sixteen weeks a clinical remission was noted in twenty of the thirty patients treated.

In a supplementary report, Shapiro[8] studied a number of patients with relapsing acne vulgaris. The twenty-five patients studied in the second series consisted of ten men and fifteen women, ages seventeen to thirty. Excellent results were produced in fifteen of these patients, four were good, three fair, and three could not tolerate the cream because of sensitization and itching. The average patient showed a clinical effect after six weeks of application namely reduction of oiliness, papules and pustules.

Whitelaw[9] treated seventy-two cases of typical adolescent acne in males for the past six years, their ages ranged from thirteen to eighteen. The preparation used was Premarin cream, the dosage being 1.25 Gm. of sodium estrone sulphate daily. He concludes that in fourteen days there was a marked improvement in skin texture and tone in 90% of the patients. In the males treated six months or longer, 55% showed marked improvement, 21% showed slight improvement, and 24% failed to respond. In only one instance was there an exaggeration of symptoms. A series of twenty-three girls ranging from thirteen to nineteen years, received similar therapy. Only 21% responded satisfactorily, and 12% showed moderate improvement. In both series, no other form of therapy or diet was used during the clinical evaluation period.

Pasieczny and Grant[10] of Glasgow, Scotland, compared the treatment of acne vulgaris by combined hormonal and vaccine therapy, with that of superficial roentgen radiation. The hormone used was chorionic gonadotropin as Antuitrin S. The vaccine utilized was a mixed staphylococcus vaccine containing one thousand million organisms per cc. The results showed that the

1. Combes, F. C. and Costello, M.J., "Recent Advances in Dermatologic Therapy," *N.Y. State Jour. Of Med.*, Vol. 50, No. 22, November 15, 1950.
2. Hamilton, J. B. "(a) Acne-Male Hormone Substance: A Prime Factor In Acne," *J. Clin. Endocrinol.* 1:570, 1951.
3. Wile, U. J., Barney, B., and Bradbury, J.T.: *Arch. Dermato & Syph.* 39:200, Feb. 1939.
4. Sulzberger, M. B. and Witten, V.H., *Medical Clinics of North America*, March 1951, 373:389.
5. Andrews, G. C., "Treatment of Acne Vulgaris," *Jour. Amer. Med. Asso.*, July 21, 1951, Vol. 146, pp. 1107-1112.
6. Phillip, A. J., "Topical Estrogens In Acne Vulgaris," *N.Y. State Jour. of Med.*, Vol. 51, No. 10, May 15, 1951.
7. Shapiro, I., "Estrogenic Treatment Of Acne Vulgaris," Preliminary Report, *Jour. of The Med. Soc. Of New Jersey*, Vol. 46, No. 3., March 1949.
8. Shapiro, I., "Estrogens By Local Application In The Treatment Of Acne Vulgaris," *A.M.A. Arch. of Derma. & Suph.*, February 1951, Vol. 63, pp. 224-227.
9. Whitelaw, M. J., "The treatment Of Adolescent Acne With Topical Application Of Estrogens," *Jour. of Clinical Endocrinology*, Vol. XI, No. 5, May 1951, pp. 487-491.
10. Pasieczny, T. and Grant P., "A Comparison In The Treatment Of Acne Vulgaris," *From the Department Of Dermatology, the Royal Infirmary*, Glasgow, April 26, 1950.

cases treated with the vaccine hormone combination therapy compared unfavorably with the results of roentgen radiation.

USE OF HORMONES

Lewis[20] et al, decided to investigate the action of progesterone in the therapy of acne only in those who demonstrated a hormonal imbalance. He treated twelve patients with a dose of 6.6 mg. of progesterone suspended in propylene glycol with four per cent benzocaine. This dose was given at weekly intervals, and the adjunctive therapy was limited to dietary restrictive measures and tropical applications. These twelve patients were resistant to ordinary therapy and only one male patient of the twelve responded well. However, they did note that dysmenorrhea was improved in several of the patients.

Way and Andrews[21] emphasize that the results obtained in their series clearly demonstrate the value of sex hormones in the treatment of acne vulgaris, and their use is justifiable when satisfactory results are unobtainable by commoner methods.

In the office treatment of a fairly large group of acne patients, we have utilized sulfur resorcin preparations containing estrogenic hormone substance as estrone, estradiol and stilbesterol. These topical pharmaceutical preparations are fairly successful in the adolescent male acne patients. However, other adjuvant measures must be resorted to. About fifty per cent of the patients are effected favorably with the combined regime. In the female, the effectiveness of this local hormone therapy diminishes to about fifteen per cent.

It has been demonstrated that there are certain foods which cause a flare-up of acneous papules and pustules. The most frequently incriminated are chocolate, nuts, pork, bacon, fried foods and iodized salt. Occasionally, there is a disturbance of constipation, increase or decrease of hydrochloric acid secretion in the stomach, and intestinal putrefaction and toxemia. This type of patient improves when observing a rigid diet, avoiding the previously mentioned foods suggested. Corrective hygienic measures with regard to constipation are suggested. The new methyl celullose derivatives are advocated, because the resulting increased bulk reestablishes the normal peristalsis. In the associated acne rosacea, where there exists a hypo-chlorhydria, the use of diluted hydrochloric acid 10 drops t.i.d. before meals seems beneficial. Acidulin in capsule form may be advisable. Brewers yeast occasionally can be supplemented in dietary deficiencies, in association with B-complex.

FOCI OF INFECTION

Frequently, we observe a sudden outbreak of pustules in a patient with acne vulgaris who previously had been responding to treatment. The area affected is usually the chin and forehead. In the female patient in the second or third decade of life, who exhibits an occasional comedone pustule, the physician must attempt to rule out any focus infection or loss of cutaneous bacterial immunity.

The foci frequently involved are infection of the teeth, tonsils, sinuses, gums or gastrointestinal tract. Occasionally there is a coexisting involvement of the function of the sebaceous glands of the face producing a seborrheic complex. In these cases one sees the seborrheic acne involving the hair margins extending to the forehead and ears. We believe that frequently these patients have a lowered local cutaneous immunity to staphylococcus albus and other organisms, which have a normal habitat on the skin.

These patients are treated with the Staphylo 'Serobacterin' Vaccine Mixed toxoid, Sharp & Dohme, starting with 0.1 cc. We increase the dosage 0.1 cc twice weekly until 1 cc. is maintained. We have found this vaccine to be of adjuvant help in the type of pustular acne that responds slowly to other accepted therapeutic modalities. A maintenance of this type of patient on a moderate daily dosage of either sulfadiazine, triple sulfonamide, aureomycin, terramycin or chloramycetin helps to prevent the recurrence of this comedone or pustular outbreak. Since there are many antibiotics available with therapeutic effect upon a wide bacterial viral spectrum, refractoriness of the organism to one medication is not a serious problem today.

DIET

Experience has taught us that a large percentage of acne patients have an aggravation of symptoms following the intake of certain foods. Whether this disturbance is due to an allergic reaction or a metabolic breakdown process is difficult to ascertain at the present time. However, the most frequently incriminating foods are chocolate, nuts, pork products, homogenized milk, wheat, tomatoes and alcohol. The method of detecting the incriminating food factor is to follow the Rowe elimination diet. Patient is placed on a bland simple diet and the suspected allergenic food added every forty-eight hours. If the outbreak occurs after the additional food is added, then that dietary factor can be considered the allergen.

During the summer months the increased intake of sweetened carbonated beverages frequently cause an imbalance in the diet with aggravation of the acne complex.

Stokes[11] in an excellent article on the carbohydrate and water metabolism, summarizes his findings as follows: "The influence of carbohydrate intake has a threefold significance upon the inflammatory condition of the skin. It may influence the skin through the gastrointestinal tract which may produce a pathologic picture leading to vasomotor instability and localized vaso-dilatation. Secondly, it may affect the skin by a hydration process with subsequent water retention in the tissues. Thirdly, the carbohydrate content of the tissue influences the inflamatory process through excessive formation of lactic acid, leading to a change in the cellular, and protective leukocytic reaction with resulting alteration in the pH of the skin."

Rosenfeld[12] as a result of research studies supports his viewpoint that excessive carbohydrate intake influences fat secretion by the glands, and is a causative factor in the acne or seborrheic group of dermatoses.

Cornbleet[13] has found that an increased carbohydrate diet is followed by diminution in the self-sterilizing properties of the skin, because of the fluctuation in the blood sugar level and a slower rate of returning to the fasting level. This condition has been observed in diabetics, and more recently, Urbach has described the entity of skin, diabetes, which he maintains occurs in repeated and stubborn cases of furunculosis.

Food containing the halogens such as iodine and bromines often aggravate acne vulgaris or may produce a halogen acne. If the physician is suspicious of this type of acne, all medication containing iodides and bromides should be restricted. Iodized salt is in the same category and patients should be warned about salt that may have additional iodine, added to the crystalline sodium chloride. The items of food that contain iodine and bromine are shelled sea food, cabbage, spinach, artichokes, brussel sprouts, refined

white bread, and cake made with refined flour.

PSYCHOGENIC FACTORS

Frequently emotional disturbances and emotional imbalance may be an aggravating factor in the acne condition. The mode of action is the increased activity of the sebaceous glands due to over stimulation of the sympathetic nervous system. Occasionally in observing acne patients, the physician notices an aggravation of the papular pustular complex following nervous excitement and emotional disturbance.

In the teenager, a sudden outbreak of an acne condition is reported before dating for dinner parties, dances and proms. Infrequently there are complicating neurotic excoriations, calcinosis, and osteoma cutis as reported by Leider.[14]

In the treatment of acne many contributing factors are important for its alleviation and final cure.

The patient must thoroughly cleanse the face and scalp. Soaps recommended are the detergent type as Dermolate, Lowila, Tersus, and sulphur and acne detergent soaps. More recently, soaps containing hexachlorophene are being utilized for their deodorant and bacteriostatic effect. The commercial names of these soaps are Dial, Surex, and Gamophene. Phisoderm consisting of a detergent, lanolin, cholesterol and petrolatum, has been found to be effective also. It can be secured also with the incorporation of hexachlorophene, signified as Phisohex.

EMPIRICAL PREPARATIONS

The empirical preparations advised for the topical treatment of acne vulgaris consist usually of precipitated sulfur, resorcinol, betamaphthol or other keratolytic agents. The active sulfur which is released chemically, acts upon the dysfunctioning sebaceous gland to cause peeling or exfoliation, and diminution of the sebaceous secretion.

Recently, various forms of sulfur preparations in different bases have been utilized with marked variation in therapeutic success. Among these more commonly recommended are Intraderm, Sulfur, Acnomel, Dermasul, Kummerfeld's Lotion, Lotio Alba and Acnestrol.

The formula for Intraderm Sulfur is:

Sulfur, as sulfides and polysulfides	0.75
Triethanolamine	10.
Sodium mixed alkyl benzene sulfonate	11.
Antipyrine	11.
Propylene glycol and water q.s.a.d.	100

More recently the various sulfur products have been combined with neutracolor (Almay), a mixture of bentonite and oxide of iron powder, to produce a lotion closely resembling the color of the skin.

Sulzberger's Anti-Acne Lotion

Neutracolor	1.0-5.0
Resorcinol	2-6
Ppt. Sulfur	2-6
Zinc Oxide Calamine Glycerine Water Spiritus	aa 10.0 aa 40.0

Acnestrol is a skin colored lotion containing zinc oxide, talcum, neutracolor and 1.75 mgms of ethyl stilbesterol dilaurate per gram; sulfur and resorcinol can be added.

Lotio Alba

Zinc sulfate	4.
Potassium Sulfurata	4.
Rose water to make	100

Kummerfeld's Lotion

Camphor	1.
Acacia (in fine powder)	2.
Glycerine	4.
Precipitated sulfur	10.
Rose water to make	100

Dermasorcin

Resorcin .....2.
Precipitated sulfur .....5.
Propylene Glycol
Sorbitan Monooleate
Liquid powder base q.s.a.d. ..100

Dermasul is precisely the same formula as Dermasorcin without resorcin. It is less keratolytic, and indicated where a milder type of exfoliation is desired.

These two preparations are marketed in various skin tinted shades and can be made lighter by adding titanium dioxide and darker by adding neutra-color.

If exfoliation is desired, betamaphthol, two to five per cent can be added to the above mentioned formulas. The additional use of hexachlorophene one per cent is also recommended, and at the present time no case of allergic sensitivity has been reported in the literature.

In our practice, we add 8 mgs. of stilbestrol to one ounce of sulfur resorcin neutracolor lotion, as described above. This makes the prescription economical to the patient, and the estrogenic substance is contained in active therapeutic doses.

Flesch[24] demonstrated the alopecia factor of intermediary polymers chloroprene and a related unsaturated compound squalene. This latter substance is an unsaturated hydrocarbon and a normal component of the human sebum. He postulates that it may have a direct effect on hair formation and baldness in man.

TOPICAL PREPARATIONS

With excessive secretion of male hormone, there is increased activity of the sebaceous gland. Since this physiologic effect is also demonstrated in the causation of acne vulgaris, we have observed concomitant findings of seborrhea capitis and the cases of acne vulgaris in the male. Experimentally, we have been using estrogenic hormone solutions topically in the treatment of seborrhea and premature alopecia of the scalp.

If a seborrhea capitis is present, frequently it is necessary to eradicate this condition as the scurf may aggravate the acne. We therefore recommend shampooing the scalp either with a mild tar shampoo or a soapless detergent as Dara. The following is one of our favorite antiseborrheic prescriptions:

Eurosol 2.0
Salicylic acid 2.0
Propylene glycol 10.0
70% ethyl alcohol q.s.a.d. 100

More recently, there has appeared on the dermatological horizon a preparation known as Selsun, which is a two and a half per cent emulsion of selenium disulfide. It has been heralded as an effective treatment of seborrhea. However, one must be careful of its untoward implications, especially when accidentally taken internally. Slinger[15] reported that of one hundred and four patients treated with the selenium disulfide emulsion, complete control was effected in 95.4% of the patients with mild seborrhea, and 84.6% of the patients with moderately severe seborrhea capitis. Favorable results were observed in most of the patients in four to eight weeks.

REDUCTION OF SCARS

The slush method for the reduction of scars and the healing of acne conglobata, still has popular usage. Dry ice, sulfur powder and acetone are mixed to form a fine slush which is enclosed in a cotton ball and then rubbed vigorously upon the surface of the skin for several seconds, until erythema results.

Many investigators have suggested the use of sandpapering the acne pits

to minimize the appearance of scars. Others have outlined the scar formation with concentrated trichloracetic or phenol to shave off the accentuated margins.

The effectiveness of all these preparations may vary according to the condition of the skin of the patient, the method of application of the therapeutic agent and also the persistence of the user. All these substances act superficially as mild exfoliating agents.

ESTROGEN AND THYROID

Andrews[5] has recommended estrogenic substance in conjunction with thyroid internally, very encouragingly, in the treatment of the acne in the male and female, especially when it is associated with a disturbance on the endocrine physiology. He prescribes a combination of stilbesterol, thyroid and powdered cascara sagrada daily, while the patient is also observing a dietary regime. He also prescribes topical keratolytic sulfur medication.

Sutton[16] proposes that acne vulgaris is a lipoidosis of the skin, and routinely prescribes thyroid extract in cautious doses. This procedure is followed after a basal metabolism is conducted.

We believe that it is advisable for us to pursue a very careful course in the prescribing of estrogenic substances internally and by injection, especially in the early adolescent. If these preparations are used excessively in large doses they may cause a permanent dysbalance of the hormonal dynamics.

TREATMENT OF ACNE CONGLOBATA

The acne conglobata or cystic type of acne reacts slowly to therapy. The majority of these patients have received a course of superficial roentgen therapy previously without effect. We are utilizing Kutapressin, a derivative of liver extract with a cutaneous vasoconstricting principle, in these cases. It is administered 1 cc twice weekly, depending upon the response of the patient. Marshall[17] has studied this specially processed liver intensively, and reports that he observed appreciably fair results in the treatment of acne vulgaris and keloids.

In the patients in whom the pustules and cysts are the predominating lesions, we find the use of an autogenous, or sensitized bacterial vaccine is effective. We prefer the Staphylo "Serobacterin" Vaccine Mixed, and when it is correctly used over a period of time, we have observed the remission of the cystic pustular type of acne.

If the acne cysts are markedly enlarged, painful and contain purulent material, we cause evacuation of these cysts by the introduction of an electrode which is sparked by monopolar oudin current. This procedure was originally described by Dana[22] and elaborated by Robbins.[23]

When there is an acute occurrence of a severe papular pustular eruption that is disfiguring and painful, it has been our routine to give the patient six daily injections of 600,000 units of acqueous procaine penicillin totaling 3,600,000 units. The antibiotic ointments Bacitracin - Tyrothricin

11. Stokes, J. H., "Carbohydrate And Water Metabolism And The Vitamins In Skin Inflammation (Dermatitis), " *Amer. Jour. of Med. Sciences*, April 1938, No. 4, Vol. 195, pp. 562-574.
12. Rosenfeld, G.: Zentralbl. f. ges. *Med.*, 40, 986, 1906.
13. Cornbleet, T.: (a) *Arch. Dermat & Syph.*, 26, 463, 1932.
14. Leider, M., Osteoma Cutis as a Result of Severe Acne Vulgaris of Long Duration," *Arch. of Derma. & Syph.*, Vol. 62, No. 3, September 1950.
15. Slinger, W. N., and Hubbard, D.M., "The Treatment of Seborrheic Dermatitis with a Shampoo Containing Selenium Sulfide," *Arch. Dermat. & Syph.* 64:41, July 1951.
16. Sutton, R. L., and Sutton, R. L., Jr.: "An Introduction to Determatology," ed. 4., St. Louis, C. V. Mosby Co., 1941, pp. 259-260.

Combined, Terramycin, Aureomycin and Chloromycetin have been used topically during the same period. They are alternated with compresses of boric acid or Domeboro solution. The least sensitizing unguent as determined by clinical evaluation performed by Lubowe[18] was found to be the Bacitracin Tyrothricin combined ointment, Tyrotrace.

ROENTGEN THERAPY

MacKee[19] advises that a maximum course of superficial x-ray should not exceed three skin units during one year. The method followed is to give one quarter unit or seventy-five roentgens at weekly doses for a maximum of twelve treatments. The eyes and scalp should be properly screened while the patient is receiving therapy. Patients who are light complected may develop an early erythema, and therefore the dosage should be eliminated.

Andrews states that after conducting a survey in evaluating the efficacy of local and internal medication compared to roentgen therapy, he believes that similar effective results can be obtained with either modality.

Superficial unfiltered x-ray therapy is still considered the therapeutic agent of choice in the refractory type.

SUMMARY

1. The etiology of acne vulgaris correlated are due to disturbances of endocrine dysfunction, dietary indiscretion, gastrointestinal causes, focal infection, allergic background, nutritional deficiencies.

2. In the treatment of acne, an attempt must be made to isolate the causal factors and treat these conditions individually or with combined treatment. The estrogenic hormone preparations are effective when applied topically or prescribed orally or given parenterally.

3. In the recurrent papular pustular type of acne in addition to the above therapy Staphylo "Serobacterin" Vaccine Mixed toxoid can be used.

4. In the treatment of acne conglobata the antibiotics are prescribed locally and penicillin given intramuscularly. The cysts are evacuated by monopolar electric current.

17. Marshall, W.: "Further Studies On The Therapy Of Acne Vulgaris With Modified Liver Extract.," *J. Invest. Derm.* 2:205, 1929.

18. Lubowe, I. I., "The Use Of Bacitracin-Tyrothricin Ointment In The Treatment Of The Pyogenic Dermatoses," *N.Y. State Jour. Of Medicine*, Vol. 51, No. 5, Mar. 1951.

19. MacKee, G. M. and Cipoliaro, A. C.: "X-rays and Radium In The Treatment Of Diseases Of The Skin," 4th ed., Philadelphia, Lea & Febiger, 1946.

20. Lewis, H. M., Frumess, G. M. and Henchel, E. J.,: "Progesterone Therapy Of Acne," A Clinical Evaluation, *Arch. of Derma. & Syph.*, Vol. 64, No. 5, November 1951.

21. Way, S. C. and Andrews, G. C.: "Hormones and Acne: "A Clinical Evaluation of Hormonal Therapy in Adolescent Girls with Acne, *Arch. Dermat. & Syph.* 61:575 (April) 1950.

22. Danna, J. A.: New Orleans M. & S. J. 93: 5 (July) 1945.

23. Robbins S. J. and Pensky, N., *Removal* of Sebaceous Cysts by Electrosurgical Means," *Arch. Derma. & Syph.*, Vol. 62, No. 3. September 1950.

24. Flesch, P.: "Hair Loss from Squalene" (18637), *Proceedings Of The Soc. For Experimental Biology & Medicine.*, 1951, V76, 801-803.

ERRATUM

On Page 316 of the July issue, in the article by Corley B. McFarland, "Method of Management for Infants and Children with Crossed Eyes", dosage is given as "one drop of twenty-five percent Atropine Sulphate solution". It should read "one drop of 0.25 per cent Atropine Sulphate solution".

Milk Allergy in a Case of Triplets

Soy milk was successfully substituted for cow's milk in a case of milk allergy in one of identical triplets.

SAMUEL HILLEL SOBEL, M.D., *New York, N.Y.*

This is a report of the occurrence of milk allergy in one of triplets, with no apparent signs of allergy in the other two.

A review of the literature has failed to disclose any similar cases.

It was an unusual opportunity to make a study of the comparative nutritive values of an hypoallergenic soy food* and cow's milk, and to demonstrate the value of the former in the handling of milk allergy.

There have been several reports of allergy in identical twins. Criep[1] describes such an occurrence in seven pairs. Five of these pairs suffered from asthma, one from eczema, and one from urticaria. All showed strong positive family histories of allergy. The date of onset was, with slight variation, about the same in both twins, and in several instances both twins were allergic to the same or similar substances. Criep has cited eight references to this subject.

It is interesting that no recent reports of such occurrences have appeared. The study of allergy in twins would seem to offer an exceptional opportunity for allergy research.

Female triplets which appeared to be identical (three cords all arising from one placenta) were born September 18 and will be referred to as B, R, L in order of birth. The respective weights were 5 lbs. 10 oz., 5 lbs. 8 oz., and 5 lbs. 8 oz. All the triplets received the same care and feeding regime, an evaporated milk-maltose dextrin formula, multiple vitamin preparation, fruit juice, and cereal, until three months of age. Their progress as noted by weight gain was excellent, all three developing equally. Table I shows the weekly weights and gains.

At three months (December 19) R began to develop gastro-intestinal disturbances characterized by vomiting and progressively increasing diarrhea. Successively, restriction of foods, change in milk formulae, and medication for control of diarrhea were instituted, but without relief.

The possibility of milk allergy was then considered, and milk was completely withdrawn from the diet and a soy milk substituted on January 2. The relief of symptoms was sudden and dramatic. All symptoms disappeared immediately, appetite and vigor returned, and weight immediately picked up. The weight gains subsequently surpassed those recorded for the sisters who had been in good health, as shown on

* Mull-Soy—supplied by Prescription Products Division, The Borden Company, New York 17, New York

1. Criep, L. H.: Allergy in identical twins, J. Allergy 13:591, 1942.

TABLE I

WEIGHTS and GAINS

First Three Months — All Babies on Milk Formula

DATE	WEIGHT			GAIN		
	B	R	L	B	R	L
	lbs. oz.	lbs. oz.	lbs. oz.	oz.	oz.	oz.
Sept. 18	5-10	5- 8	5- 8	—	—	—
Sept. 28	5- 1	5- 3	5- 3	—	—	—
Oct. 5	5-11	5- 7	5-14	10	4	11
Oct. 12	6- 3	6- 2	6-11	8	11	13
Oct. 19	6-15	6-15	7-13	12	13	18
Oct. 24	7- 3	7- 2	8- 1	4	3	4
Nov. 1	7-15	7-11	8-12	12	9	11
Nov. 7	8- 7	8- 3	9- 5	8	8	11
Nov. 14	9- 0	8-12	9-12	9	9	7
Nov. 21	9- 9	9- 1	10- 2	9	5	6
Nov. 28	10- 0	9-12	10- 8	7	11	6
Dec. 5	10- 6	10- 0	11- 0	6	4	8
Dec. 12	10-13	10- 9	11- 8	7	9	8
Dec. 19	11- 6	11- 2	11-14	9	9	6

Chart I and in Table II. All other dietary and general-care factors for the three remained the same throughout.

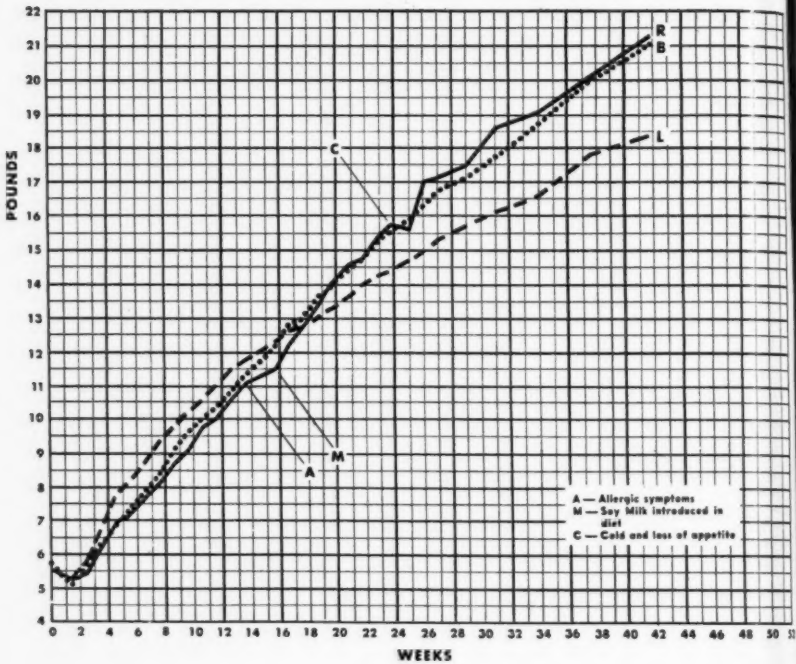
There is a history of allergy in the father, as evidenced by a skin condition. No allergy tests were done on R other than the elimination of the offending milk from her diet. However, at one time the supply of

TABLE II

WEIGHTS and GAINS

B & L on Milk Formulas: R on Soy Formula

DATE	WEIGHT			GAIN		
	B	R	L	B	R	L
	lbs. oz.	lbs. oz.	lbs. oz.	oz.	oz.	oz.
Jan. 2	12- 4	11- 8	12- 5	14	6	7
Jan. 9	12-11	12- 5	12- 9	7	13	4
Jan. 16	13- 0	12-14	12-14	5	9	5
Jan. 23	13- 9	13- 7	13- 2	9	9	4
Jan. 30	14- 0	14- 1	13- 6	7	10	4
Feb. 6	14- 7	14- 9	13-10	7	8	4
Feb. 13	14-14	14-14	14- 0	7	5	6
Feb. 20	15- 4	15- 7	14- 4	6	9	4
Feb. 27	15-10	15-14	14- 7	6	7	3
March 6	15-15	15-12	14-13	5	-2	6
March 13	16- 5	17- 0	15- 0	6	20	3
March 20	16-12	17- 3	15- 6	7	3	6
April 3	17- 3	17- 8	15-12	7	5	6
April 17	17-14	18- 9	16- 1	11	17	5
May 8	18-14	19- 2	16- 9	16	9	8
May 31	20- 0	20- 1	17-12	18	15	19
July 2	21- 1	21- 5	18- 7	17	20	13



soy milk became exhausted and a milk formula was given. The baby immediately became ill, but recovered completely as soon as she was back on soy milk.

CONCLUSIONS

Milk allergy need no longer be the difficult infant feeding problem it was formerly. Complete elimination of milk and all milk-containing foods is feasible and desirable in milk allergy and can now be safely and simply carried out. The soy preparation fed to baby R gave weight and growth curves equal to and better than those of the two sisters fed a cow's milk formula. Periodic health checkups also confirmed the excellent development of baby R as compared with her sisters.

SUMMARY

1. Several cases of allergy in identical twins have been reported in the literature, but no reports of this condition in triplets could be found.
2. A case of gastrointestinal allergy caused by milk in one of a set of identical female triplets is reported.
3. Elimination of milk from the diet of the allergic baby and substitution of soy milk caused a dramatic regression of symptoms, and weight gains which surpassed those of the non-allergic sisters.

Fractures in Children

Reducing fractures and fixation are best obtained by simple conservative means

WALTER P. BLOUNT, M.D., *Milwaukee, Wisconsin*
Chairman, Fracture Service, Milwaukee Children's Hospital

Fractures in children are different from fractures in adults because children grow after the fractures have healed. Continued growth is important for three reasons. First, there is frequently an increased rate of growth for several months following a fracture. This is due to the increased blood supply with callus formation. It is a simple physiologic phenomenon and not a "compensatory" overgrowth. It will tend to equalize shortness from overriding. Second, growth will correct minor angular deformities near the ends of bones. Third, there may be deformity and shortening due to the injury of an epiphysis.

The results of good treatment are routinely better in children than in adults. With improper care the complications may be disastrous. The principles of treatment are simple. Alignment is the chief requirement. The fracture should not be angulated nor rotated. Accurate apposition and exact length are not necessary in children. In most cases, excellent results are obtained by simple traction or closed reduction and a cast. The exceptions which often require open reduction are definite and predictable. They comprise three relatively common fractures about the elbow and a few rare joint fractures. Elsewhere, open reductions in children are difficult to justify.

FRACTURES OF THE FEMUR

Fractures of the shaft are uniformly well treated with Russell traction in older children and with double Bryant overhead traction in younger ones. Avoid constricting bands of adhesive which may cause disastrous circulatory embarrassment. Proper adjustment of two sets of weights and pulleys will align any such fracture. Adduction of the proximal fragment is corrected by increasing traction on the opposite leg so as to tilt the pelvis down on the side opposite the fracture. Excessive flexion of the upper third, and angulation with the apex posteriorly of the distal third, are both corrected by changing to overhead traction or by adding an upward pull on the knee sling of Russell traction. It is easy to prevent rotational deformity by keeping the feet in the same position.

End-to-end opposition is not only unnecessary, but undesirable. In a large series of cases, the average overgrowth was one-half inch. To obtain an end result with equal leg length, it is best in most cases to start with one-half an inch of overriding. Too long a leg is just as bad as one that is too short. Callus

forms more rapidly and union is stronger with side-to-side than it is with end-to-end apposition. With skeletal traction there is danger of epiphyseal damage. It should not be necessary in an uncomplicated case. In general, cast treatment is less reliable than traction, althought it may be indicated at times.[1]

Open reduction is occasionally necessary in rare fractures through the distal femoral epiphysis and usually at the proximal epiphysis and neck of the femur. The first of these is a surgical emergency because of likely circulatory embarrassment. There are competent surgeons who feel that there are still indications for open reduction of shaft fractures. We have collected some of the results of casually performed operations for plate fixation. These tragic complications include sepsis and death; chronic osteomyelitis; deformity with joint stiffness; repeated refracture; and persistent non-union. Treatment by traction or cast has given such uniformly good results without any complications that open operation is difficult to justify.

TIBIAL FRACTURES

In children, a spiral fracture of the tibia frequently occurs without fracture of the fibula. Five to seven weeks in a cast from toes to midthigh with the knee in flexion is all the treatment that is necessary. Transverse fractures of the middle and distal thirds may require closed reduction under anesthesia with the same fixation. Ankle fractures are less common and usually involve the epiphysis. Closed reduction is almost invariably satisfactory. When reduction is delayed and displacement is moderate, one should leave the deformity rather than add the insult of open reduction or of violent closed reduction. Epiphyseal fractures at this level may be followed by arrested growth. The extent of retardation is dependent on the amount of injury of the growing cells of the epiphyseal plate by the initial trauma or the subsequent treatment. Linear and angular deformities should be recognized promptly and corrected by epiphyseal stapling[2] before it is too late for this procedure to be of value.

Fractures about the foot are usually due to direct trauma. A displaced tarsal or metatarsal fracture is manipulated under anesthesia to produce a normal-looking foot. A short plaster cast maintains the position. Supplementary traction on the toes is occasionally desirable in metatarsal fractures. These fractures heal without disability even when they are grossly displaced. It is difficult to conceive of an indication for open reduction.

FRACTURES OF THE UPPER EXTREMITY

Fractures of the clavicle are well treated in young children with a figure-of-eight bandage of stockinette stuffed loosely with sheet wadding. In older children a Billington plaster yoke or other rigid fixation may be preferable. Open reduction is never warranted.

In order of frequency, fractures of the humerus occur through the condyles, the shaft, below the tubercles, and through the upper epiphysis. Subtubercular fracture is best treated by a hanging cast. Accurate reduction is not necessary. The hanging position will correct any displacement. This will correct any angulation. Shortening of one-half an inch is desirable and will be equalized by subsequent overgrowth in most cases. As in fractures of the femur,

1. Blount, W. P., Schaefer, A. A., and Fox, G. W.: "Fractures of the Femur in Children." *Southern Medical J.* 37: 481, 1944.

2. Blount, W. P., and Clarke, Geo. R.: "Control of Bone Growth by Epiphyseal Stapling." *J. Bone & Joint Surg.*, 37-A: 464, 1949.

bayonet apposition leads to more rapid and solid healing with prompt return to normal function. Moderate degrees of angulation will be overcome but rotational deformities will not. Treatment by bed rest with traction in abduction is likely to produce rotation unless the elbow is flexed as a guide to position.

In children under twelve, epiphyseal fractures at the proximal end of the humerus may be treated in the same way. The rapid restoration of function and bony contours is remarkable. Growth arrests have not been observed. Considerable displacement and moderate angulation are permissible. It is a common but vicious mistake to think that open reduction is justified. Operation causes limited motion.[3]

Supracondylar (called also transcondylar or diacondylar) fractures of the humerus are usually produced by hyperextension at the elbow with a fall on the out-stretched hand. A green-stick fracture is angulated with the apex anteriorly. In a complete fracture with posterior and proximal displacement of the distal fragment, the deformity is extreme. If the fracture is treated promptly and there is little soft-tissue damage, immediate closed reduction and fixation in moderate flexion produces a high percentage of excellent results. Accurate reduction lessens the likelihood of vascular embarrassment.

If there has been severe soft-tissue damage or if reduction has been delayed, there may be extreme swelling. Attempted closed reduction is then undesirable. Traction on the forearm with the elbow in moderate flexion is the method of choice. By careful balancing of forces, an excellent reduction may be obtained in most cases. Occasionally there is a persistent posterior displacement of the distal fragment. As long as alignment is accurate, such displacement is not of great significance. Dunlop's method of traction may be simplified by suspending the forearm from a bent Balkan frame[4] or a conventional overhead device. After three weeks in bed, the patient is ambulatory with a sling. It may be desirable after a few days to interrupt traction in bed and to obtain an accurate reduction by manipulation under anesthesia. The results with open reductions in children are worse than those with the more time consuming conservative measures.

Comminuted condylar fractures in adults frequently require open reduction. In children they may be reduced with surprizing accuracy if seen promptly. The fragments may be molded into good position which is then maintained by a hanging cast.

The risk of complication is great in all complete supracondylar fractures. Impairment of circulation and nerve injury depend upon the initial trauma and the subsequent handling. The greatest danger is Volkmann's ischemia. Prompt gentle reduction and immobilization without constriction offer the best defense. If the radial pulse is present, it should not be obliterated by the manipulative reduction. If it is absent before treatment is started and if the capillary circulation is good, the pulse may be disregarded. An absent radial pulse is not an indication for operation. Most significant as warnings of impending disaster are pain in the hand; swelling; coldness;cynanosis; or pallor of the fingers. The most important of these is pain. A well-reducted fracture in a child should not require sedation other than

3. Austin, L. J.: "Fractures of the Morphological Neck of the Humerus in Children." *Canadian M. A. J.* 40: 546, 1939.

4. Allen, Philip D., and Gramse, Arthur E.: "Transcondylar Fractures of the Humerus Treated by Dunlop Traction:" Report of 21 Cases from Children's Surgical Service, Bellevue Hospital, New York City. *Am. J. Surg.*, 67: 217, 1945.

aspirin. If there is evidence of circulatory embarrassment and threatened ischemia, all constricting bandages are removed from the elbow and forearm, angulation is reduced to about 120° and ice bags applied. Satisfactory position of the fragments and elevation of the forearm are maintained by traction. Usually this may be applied to the skin of the forearm without constriction, but a Kirschner wire through the olecranon[5] or even the base of the thumb may be preferable. Prompt blocking of the sympathetic ganglia is frequently effective. If the symptoms are well advanced or will not subside with conservative treatment, no time should be lost before exploring the cubital fossa and volar aspect of the forearm. The tough fascia is slit, permitting the explosive extrusion of edematous muscles and hematoma. An injured or markedly constricted brachial artery should be resected. This relieves vasospasm and the reflex involvement of the intimate vasculature of the muscles. Delay is disastrous. Within three or four hours, irreversible changes have taken place. The all-too-frequent claw hand usually means inadequate or delayed therapy.[6]

FRACTURES ABOUT THE ELBOW WHICH MAY REQUIRE OPEN REDUCTION

Fractures of the lateral condyle are not fully appreciated. The displacement is largely rotational and the immediate local symptoms are less arresting than those with supracondylar fractures. Function is surprisingly good and the injury is frequently dismissed as a sprain. Most of the distal end of the humerus is still cartilaginous so that the characteristic displacement of the capitellar fragment remains unrecognized in the roentgenogram. The articular cartilage is opposed to the fractured surface of the shaft. The fragment is often angulated distally 180 and rotated 90 by the attached extensor muscles of the forearm. Even if it is promptly reduced by closed methods, the fragment is usually displaced again by the attached muscles.

When unreduced, this fracture usually fails to unite. With growth the carrying angle of the elbow increases. Deformity, weakness, and pain in the elbow follow. The most significant disability is delayed ulnar nerve palsy, which usually appears about twenty years after the injury. Closed reduction with fixation in flexion must be proved successful by frequent roentgenograms. Open reduction and internal fixation are usually necessary. The results following prompt and skillful operation are excellent.

Avulsion of the medial epicondyle results from valgus strain of the elbow with or without dislocation. If the displacement is slight, immobilization in flexion for three weeks is all that is necessary. If the displacement is more than five millimeters open reduction must be considered. Closed reduction is of no value. If the fracture remains untreated, it usually fails to unite. Occasionally there is malunion with the formation of a horn of bone. Non-union confers little disability and may be the desirable end-result in girls. When there is considerable displacement one should expose and replace the fragment and hold it with a removable metal pin. If there is ulnar nerve involvement, or if the medial epicondyle is incarcerated in the elbow joint, operation is imperative. In fresh cases, the medial epicondyle is replaced. If the operation is delayed, it may be preferable to excise

5. Carli, Carlo: "Trazione col filo nelle fratture sovracondiloidee di gomito del bambino." *Chir. d. org. d. movimemto*, 18: 311, 1933.
6. Blount, W. P.: "Volkmann's Ischemic Contracture." *Surg., Gynec., & Obst.*, 93: 244, 1950.

the fragment and suture the aponeurosis of the flexor muscles to the medial condyle. There is no likelihood of deformity because the medial epicondyle is only an apophysis and has no part in longitudinal growth.

FRACTURES OF THE RADIAL NECK

Fractures of the radial neck illustrate well the difference between fractures in children and adults. In children there is characteristically angulation and displacement toward the radial side. Angulation of 45° is of little real significance. Manipulation is not necessary but may improve the position. Immobilization in a cast with the elbow at right angles will promote rapid healing. Initial marked limitation of all motions at the elbow will gradually subside and roentgenograms will eventually look almost normal.

If there is 90° of angulation so that the fractured surface comes to lie against the shaft of the radius, the problem is more serious. Satisfactory closed reduction is rarely possible. Persistent displacement causes prolonged disability. In the past, uninformed surgeons removed the radial head to obtain better motion. The loss of the growth center causes radial deviation of the hand, shortening of the forearm, increase in the carrying angle, and weakness of the elbow.[7] Never remove the radial head in a growing child.

When the displacement is considerable, open reduction and accurate replacement are indicated. Internal fixation is usually unnecessary and is undesirable. The radial head may be pulled gently into position with sharp hooks. When the dislocation of this part of the elbow joint is accurately reduced and the elbow flexed, pronation and supination will not dislodge the fragment. Immobilization in flexion should be continued for three weeks. End-result studies have repeatedly shown that normal elbows are obtained by this treatment. Delay in reduction or careless surgery will produce permanent limitation of motion.

Olecranon fractures rarely occur as isolated injuries in children. Fixation in extension is permissible. Not infrequently, olecranon fractures are associated with dislocation of the radial head. If both are treated promptly, closed reduction is usually successful. Open reduction of a dislocated radial head may be necessary. Fractures of the proximal third of the ulna associated with dislocation of the radial head (Monteggio) are rare in children. They do not require internal fixation of the ulna as in adults. When the radial head is reduced by manipulation or by open operation, if necessary, the ulna is satisfactorily splinted by the radius. Dislocation of the radial head in children, either with or without associated fracture, should not be reduced by open operation after a delay of several months. This dislocation causes no disability in a child, although it may be unsightly. Delayed open reduction results in slight but permanent limitation of motion. Excision of the radial head leads to the deformity and disability previously mentioned and is absolutely contraindicated. After the child is fully grown the radial head may be excised.

FRACTURES OF THE FOREARM

Fractures of the forearm occur in order of frequency in the distal third middle third, and proximal third. Open operation is not justified at any level. Green-stick fractures of the distal third may be left unreduced if the angulation is less than 30°. The angulation will gradually disappear. Angulated fractures of the middle third will not straighten out entirely

7. Lewis, Raymond W., and Thibodeau, Arthur A.: "Deformity of the Wrist Following Resection of the Radial Head." *Surg., Gynec., & Obst.*, 64: 1079, 1937.

except in very young children. Pronation and/or supination will be limited with even slight angulation. Green-stick fractures at this level should be broken completely through. They will then remain in good position in a plaster cast from knuckles to midarm with the elbow at right angles and the forearm in midsupination. If a green-stick fracture is not broken through, the deformity will return in the cast. Wedging of the cast or the use of a pressure pad is an invitation to Volkmann's ischemia. No force should be necessary in maintaining the reduction of a forearm fracture. The appearance of pain is a danger signal.

Displaced fractures of the proximal third can usually be reduced in supination and held in plaster. Over-riding is not objectionable. Satisfactory alignment can be maintained by traction on the fingers with a banjo attachment on the cast (figure 1). End-to-end apposition is not necessary. Perfect restoration of the contours will be obtained in a few months. Function will be normal. The same is true of fractures of the middle third except that they should be immobilized with the forearm in midsupination. Slight shortening is not significant but angulation is not permissible. Malposition is an indication for more efficient conservative treatment and not for open reduction.

A complete fracture of both bones at the distal end of the forearm is usually angulated with the apex volarward and with dorsal displacement of the distal fragments. There is a strong tendency for the angulation to return after a reduction. Immobilization should be by a long cast with the forearm in midrotation or pronation. Molding of the cast is more effective in preventing angulation than is the use of the extreme flexed position of the wrist. Check-up roentgenograms are imperative after one or two days and again at a week. If angulation of less than 25° has recurred, it may be ignored in children of less than ten years. Eventual function and appearance will be normal. Progressive increase of angulation in the cast is not infrequent. If the angulation is excessive, another reduction should be performed after some callus has formed. The use of pressure pads or rods is to be avoided. Bayonet apposition is satisfactory. Alignment can always be maintained by traction. There is no justification for open reduction. Disastrous complications are rare but are inexcusable when the results with closed methods are so good.[8]

Epiphyseal fractures of the distal end of the radius or both bones of the forearm are not infrequent. Complete separation may be easily reduced if seen promptly. Minor displacements may be left unreduced. Complete prompt return of normal function and anatomy is the rule. Usually there is no disturbance of epiphyseal growth. There may be slight over-growth. There is always the possibility of considerable retardation of longitudinal growth. The fracture may be treated like any fracture of the distal end of the forearm. The end-result is dependent not upon the accuracy of reduction but upon the amount of trauma to the growing cells of the epiphyseal plate. Forcible reduction or open reduction of such an epiphyseal fracture are vicious because of the danger of causing additional trauma.

Dislocations and fractures of the carpus are rare in children. Open reduction may be required. The results are surprizingly good. Fractures of the metacarpals and phalanges should be accurately aligned. Apposition is not important. Frac-

8. Blount, W. P., Schaefer, A. A., and Johnson, J. H.: "Fractures of the Forearm in Children." *J. A. M. A.* 120: 111, 1942.

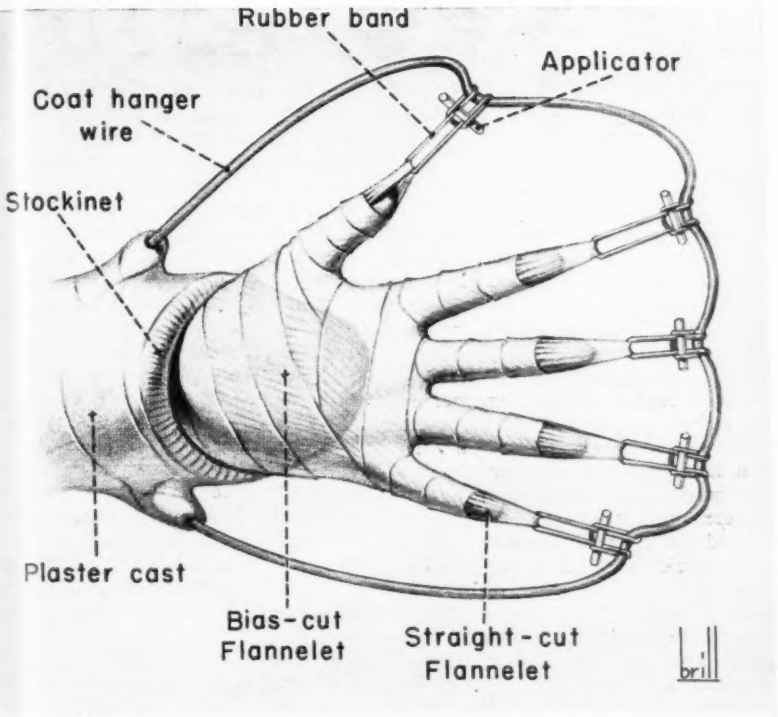


Figure 1.

Difficult fractures of the forearm at any level may be prevented from angulating by the use of traction on the digits. An anesthetic is not necessary. The traction strips are applied first. The cast is then completed. A coat hanger makes an ideal banjo wire.

ture dislocations of the digits should be operated upon to remove the capsular obstruction if they cannot be reduced by closed methods.

SUMMARY

Fractures in children are different from fractures in adults. The treatment of those which look easy is occasionally difficult while treatment of the ones that appear difficult is often easy. Reduction and fixation are best obtained by simple conservative means and open reduction is difficult to justify. When there is a definite need for operation it should be performed promptly.

Cancer Test

Author presents a simple blood test. Blood obtained by puncturing the fleshy portion of the patient's finger tip is allowed to dry in the form of three droplets on a glass slide. It is wise to prepare two such slides. The pattern when observed microscopically shows definite characteristics, providing a sensitive indicator of the presence or absence of cancer. Normal blood shows a well defined mosaic appearance or a weblike pattern. Much fibrin is present, leukocytes are scarce, and the red blood cells are tightly packed with rouleau formation and no variation is seen in the size or shape of the corpuscles. In early cancer a pattern can be recognized which appeared to indicate transition or an early braking down of the normal pattern. Fibrin is breaking down in several areas. There are still many red and white cells present in the aggregate and some agglutination with small lacunae and a number of granules. The final stage of the full bloom cancer shows very few fibrin threads, but large amounts of clear interspace or lacunae are seen. Through agglutination, cells are clumped together in masses and the reticular network has entirely disappeared. When cures of cancer were obtained by surgery, radium, irradiation, or by combination of these methods, the pattern changed from positive to negative within a short period of from 6 to 8 weeks. In some instances the blood droplet test pointed to the presence of early carcinoma before there was any clinical or roentgenological evidence. Likewise it was negative in noncancerous conditions. (Bolen, H.L., Am. J. Digest. Dis. 5:127, May 1952)

Cancer of Peritoneum

The commonest malignancy of the peritoneum is secondary carcinoma; primary malignant tumors are rare. The following forms may be distinguished: discrete nodules; plaque-like masses; diffuse adhesive forms; flat subperitoneal forms; cystic forms; pedunculated forms; 'Skin-graft' forms; pseudomyxoma and bizarre forms. In the differential diagnosis the following conditions should be borne in mind: tuberculosis; encapsulated foreign bodies (and talc granulomas); nodules and cysts due to chronic sepsis (salpingitis) or mechanical irritation; fat necrosis (pancreatitis, trauma, infection); lesions due to metazoan parasites (hydatid disease, schistosomiasis, teniasis); polyarteristis nodosa; gas cysts (accidental findings in malnourished cases of pyloric stenosis); enterogenous cysts; splenosis (implantation and growth of splenic tissue on peritoneum after rupture of a normal spleen); lesions to bacteria other than tuberculosis (leprosy, brucellosis, actinomycosis); ruptured mucocele of appendix (followed by pseudomyxoma peritonei). (A. Daniel. Brit. J. Surg. 39:147, September 1951).

Hyperthyroidism

The authors state that Galactose Tolerance and Index are elevated in thyrotoxicosis. The Galactose Tolerance and Index do not always parallel the BMR; they are, however, a definite aid in evaluating the toxicity of the thyroid gland. The thyroid gland is probably the controlling mechanism with the small bowel act of the absorbing site of galactose. (A. Kraft and W. Wolf, Ill. Med J., 5:311, Nov. 1951)

Diabetes Mellitus

Heredity plays an important role in the etiology of diabetes mellitus. The congenital weakness of the island apparatus of the pancreas probably is due to a diminution of the so-called beta cells which normally have a proportion to the alpha cells of 3 to 1, a proportion which is decreased to 1 to 1, frequently, in diabetics. The part of the liver in the causation of diabetes is also essential. It has been assumed that a primary liver diabetes may occur if certain liver ferments are lacking. The connection between pancreas and liver can be seen in the fact that the alpha cells of the pancreas produce glycagon (murlin) which stimulates glycogenolysis in the liver. The influence of the central nervous regulation mechanism is predominantly directed to the liver; yet, there is a sugar center in the hypothalamus which has connections with the pancreas. The question as to a diabetes caused by lesions of the CNS has not been solved with certainty in man, while it has been evidenced in animal experiments. The extrainsular indocrine system also is related to the sugar metabolism. The frequent glyosuria in diseases of the anterior pituitary (acromegaly; Cushing's syndrome) is well known. Diabetic reactions also occur in diseases of the suprarenal medulla and in adreno-cortical tumors as well as in hyperthyroidism. On the other hand, an existent diabetes improves when simultaneously a myxedema develops. (E. Grafe. Muench. med. Wchnschr. 33/34:1639, 1951).

Missed Diagnosis in Heart Disease

1. Mitral stenosis with normal rhythm due to the failure to recognize the sharp character of the first heart sound. 2. Mitral stenosis with auricular fibrillation in the last stages of congestive heart failure. The patient is orthopneic and auscultation is difficult, thus, no murmurs are heard. Yet, there is right axis deviation in the EKG and the first heart sound is too good for the degree of heart failure; 3. Aortic stenosis, because of failure to note the quality of the murmur, the diminution of the second heart sound, and the greater intensity of the murmur at the apex or the left sternal border rather than in the aortic area. (H. B. Sprague. Minnesota Medicine, 34:856, September, 1951.)

Thrombosis of Internal Carotid Artery

The neurological syndrome is characterized by hemiparesis on the opposite side of the lesion, involving chiefly the upper limb, then the face, and, to a less degree, the leg. There may be sensory disturbances, which consist in impairment of cortical sensation and in severer cases may involve all types of sensation. Impairment of vision is frequent. In the diagnosis one has to distinguish between a space-occupying lesion (tumor, hematoma, hemorrhage) and an occlusive vascular process. The mode of onset, and the evolution, often allow one to diagnose a thrombosis clinically. The only physical sign which enables one to locate it in the internal carotid artery, rather than in one of its branches, is a decrease or loss of the carotid pulsation. Final evidence is given by cerebral arteriography. While there are multiple etiological factors, the two most frequent causes are arteriosclerosis and thrombangitis obliterans. (A. R. Elvidge; A. Werner. Arch. Neurol. & Psychiat. 6:752, December, 1951.)

Skin Allergy

The relative refractory allergic skin conditions, such as food urticaria, contact dermatitis, atopic dermatitis, penicillin reaction and reaction to tetanus anti-toxin, were treated by the author with a combination of procaine and ascorbic acid by mouth. The treatment is started with three tablets, each of which consists of 220 mg. of procaine hydrochloride and 150 mg. of ascorbic acid. Later on two tablets are given every two hours. The patient experiences relief of severe allergic reactions with no untoward effects within a few days; particularly itching and pruritus responded satisfactorily. (H. Luddecke, Arch. Dermat. & Syph., 64:9, 1951)

Fibrocystic Disease of the Pancreas

Author studied the effect of aureomycin as the sole therapeutic agent in 17 children, ranging from 2 months to 7 years of age, with fibrocystic disease of the pancreas. An empiric dosage schedule of 25 mg. per Kg. of body weight was arrived at. Weight and growth gain was rapid in the beginning and slowing to the usual rates thereafter. Polyphagia remained marked; the bulky, foul and frequent stools also remained. There was also no change in the pancreatic function, as measured by assays for trypsin in the duodenal contents. The improvement, thus, was apparently due to relative freedom from infection, greater physical and social activity, and better outlooks resulting from obvious somatic improvement. Reduction of dosage or withdrawal of aureomycin was followed by exacerbation of symptoms. (D. Stowens. Pediatrics, 8:60 (July, 1951).

Cation-Resins

The oral administration of cation-exchange resins for the removal of sodium from the intestinal tract in patients with edema has been found a useful procedure. The amount of sodium removed ranged from 0.25 to 0.8 mEq. per gram of resin. For practical purposes a daily dose of 45 gm. may be expected to remove approximately 2 gm. of sodium chloride. Larger doses may be poorly tolerated because of their bulk. Since most resins remove more potassium than sodium, at least 1.3mEq. of potassium (equivalent to 0.1 gm. of potassium chloride must be given per gram resin administered. This may be incorporated in the resin. A contraindication to the administration of resin is a significant degree of renal insufficiency. The authors employed permutit Z (Permutit Company of America, New York) and amberlite XE-96 (Smith, Kline & French Laboratories, Philadelphia). K. Emerson, Jr.; S. S. Kahn; J. W. Vester and K. D. Nelson. Arch. Int. Med. 5:605 November 1951).

Amebiasis

One chiniophone tablet of 250 mgs. is given 4 to 6 times daily for two weeks or 2 tablets of diodoquin t.i.d. for 3 weeks. Diodoquin is tolerated extremely well. In refractory fistulae after operation for liver abscess, tablets of chloraquin diphosphate, 250 mg., 4 on the first day, 2 on 2nd, 3rd and 4th day, are beneficial. Aureomycin and terramycin capsules in doses of 250 mg. four times daily for one week and bacitracin 30,000 units, every 6 hours for 5 to 20 days also have favorable effect. (I. Snapper. Rev. Gastroenterol. 18:801, Nov. 1951)

Angina Pectoris

Author recommends injectable khellin. He employed an aqueous suspension of khellin which contained 50 mg. of the drug per cc. Two cubiccentimeters were administered by deep intramuscular injection in the gluteal region daily for 10 days. The author gives case reports which show that in all cases the improvement of the subjective symptoms was satisfactory. "Neither of these patients exhibited toxic manifestations while on intramuscular khellin. There was a slight 'stinging' at the time of injection and the local reaction was comparable to that obtained with aqueous suspensions of procaine penicillin." (S. H. Schwartz and J. Minz. J. of the Med. Soc. of New Jersey, 49:8, January 1952.)

Tetany-Epilepsy

Tetany and epilepsy are separate entities. When they occur simultaneously, epilepsy follows tetany. In subjects with an epileptic constitution hypocalcemia acts as a precipitating factor of epileptic seizures. In all cases of epilepsy of unknown origin the possibility of parathyroid insufficiency should be considered; symptoms of tetany should be looked for, and the concentration of blood calcium and inorganic phosphate should be determined. Barbiturates in these cases are of no avail. The blood calcium level should be elevated by means of calciferol or dihydrotachysterol (Holtz's A.T. 10) which gives excellent results if administered in adequate doses (calciferol 4 - 10 mg. daily by mouth) for a sufficiently long time. Treatment directed toward increasing the blood calcium is specific for parathyroid insufficiency; when it causes disappearance of epileptic seizures it may be concluded that hypocalcemia due to hypoparathyroidism acted as precipitating factor in the epileptic convulsions. (H. Gotta. Arch. Neurol. & Psychiat. 6:714, Dec. 1951)

Pulmonary Emphysema

In chronic pulmonary emphysema anoxia is the most important factor responsible for circulatory complications; bronchiolar spasm and obstruction are the causes of this anoxia. The consistent treatment consists of combating pulmonary infection with antibiotics, reducing bronchial secretions with digitalis and atomized bronchodilators, and reducing the high cardiac output by phlebotomy. Intermittent Oxygen treatment is also helpful. (R. M. Harvey; M. I. Ferrer; D. W. Richards, Jr. and A. Courmand. Am. J. Med. 10:719, June 1951).

Panthenol

Authors report on the local use of pantothenic acid and its active alcohol analog pantothenyl alcohol—panthenol—(U.S. Vitamin Corporation) in dermatologic practice. A 5 percent and/or 2 percent panthenol cream was applied. In a variety of dermatologic disorders (eczema, varicose ulcer, psoriasis, contact dermatitis, diaper rash, dermatitis, fungus infection, etc.) this preparation proved to be of therapeutic benefit. "This preparation showed clinical evidence of epithelizing stimulation, of an antipruritic effect, and of an antibacterial effect in these dermatoses of varied etiology. In some cases the result was obtained with a marked efficiency not obtained by other topical remedies." No evidence of sentitization was observed. (P. R. Kline and A. Caldwell. New York State J. of Medicine 9:1141, May 1, 1952).

Books of General Interest for the Practitioner

Although parasitology has somewhat receded from the foreground of medical concern due to the more and more specific management of parasitic diseases, a presentation of those parasitic animals[1] which may attack man or his domesticated animals will still be of great interest. The author has accomplished its task comprehensively in throwing into relief both the medical and the veterinary aspects. The sixth edition of the Merck Index[2] is again an excellent reference book on Chemical and Drugs, on usage of terms, on 'Name' reactions, and offering a wealth of information on related subjects. A brief, yet lucid course on histology[3] will be welcomed by general practitioners, especially as the depiction of the morphological material is integrated by a short evaluation of function which makes this volume practically valuable. In the same line, yet more technical in nature and of particular advantage for the pathologically oriented physician, is a book on the methods in histopathology;[4] in-asmuch as the general practitioner is occupied with histopathological work, this guide of accepted standard and of modified methods will prove to be very useful. A biochemical monograph on those carbohydrate derivates which are called peptic substances[5] offers comprehensive information on the chemistry, botany and biochemistry of these 'interesting compounds.' The chapters on peptic enzymes and the application of peptic substances in foods and nonfood products are very instructive.

In a time when the general public has become so profoundly concerned with medical progress, a book which recounts the development of treatment methods of the past decades[6] in a critical and composed way, thus, giving the layman the well balanced inside story of recent therapeutical achievements, their scope, limits and outlook, will be gratefully received by both physicians and patients. The book contains chapters on antibiotics, DDT, Rh factor, cortisone, allergy, dramamine, congenital heart diseases, etc., all clearly written with calm equanimity which emanates to the reader. A very subjective presentation is the memoirs of a physician [7] who as an immigrant from a jewish community in Lithuania finds his way to medicine in this country, becoming a reputed ophthalmologist and a good American, yet adhering to his childhood experiences and, thus, espousing Zionism. The Lithuanian environment in Czarist Russia is vividly depicted; and the transition to Americanism also is thrown into relief impressively. Medicine remains somewhat in the background.

1. Parasitic Animals by Geoffrey Lapage, M.D., Cambridge, at the University Press, New York, 1952. 35 Pages. Cloth. $4.
2. The Merck Index. Sixth Edison. Published by Merck & Co., Inc., Rahway, N.Y. 1167 pages. Cloth. 1952. $7.50 (8).
3. Essentials of Histology. Sec. Ed., by Margaret M. Hoskins, Ph.D. and Gerrit Bevelander Ph.D., The C. V. Mosby Company, St. Louis, 1952 240 pages. Cloth. $4.
4. Histopathological Technic. Including A Discussion of Botanical Microtechnic. By Aram A. Krajian, Sc.D. and R.B.H. Gradwohl, M.D. Second Ed. St. Louis. The C.V. Mosby Company. 1952. 362 pages. Cloth, $6.75.
5. The Peptic Substances by Z. I. Kertesz. Interscience Publishers, Inc. New York. 1951. 628 pages. Cloth $13.50.
6. Medical Milestones. By Henry J. L. Marriott, M.D. The Williams and Wilkins Company, Baltimore, Md., 1952, 293 pages, Cloth. $3.50.
7. Between Two Worlds. The Memoirs of A Physician. By Benjamin L. Gordon, M.D. Bookman Associated, New York. 1952, 345 pages. Cloth. $4.

Books on Internal Medicine

A timely book, especially because of the presentation of virus problems is the second volume[1] of the Microbiology series. It deals with the reproduction and biological functions of bacteria, fungi, protozoa and, as mentioned, of viruses. The statistical evaluations are particularly revealing. A volume to be highly welcomed by general practitioners is a compilation of the specialties as essential in general practice[2]. In a concise and relevant form are those special diagnostic and therapeutic methods explained which the practitioner may employ in his daily work. 14 authorities in their fields have joined to prepare this important book which contains chapters on minor surgery, orthopedic surgery, fractures and dislocations, urology, diseases of rectum and colon, gynecology, pediatrics, ophthalmology, diseases of nose and throat, diseases of larynx, bronchi and esophagus, otology, dermatology and syphilology, and psychiatry. A very laudable and very instructive enterprise is a treatise on antibiotic treatment[3] which describes the progress in the application of antibiotics; the first part of the book outlines the pharmacology of the various antibiotics and their dosage while the second part deals with indications and practical administration. This is a timely and necessary exposition. Another book of unquestionable value for the practicing physician is a volume on the thyroid gland[4]. All aspects of this important subject are thoroughly viewed: goiter, hypo- and hyperthyroidism, general anatomy and physiology of the gland, interrelationship with other endocrine glands and with the vitamin metabolism, the treatment tools, including surgical indications. The bibliography is comprehensive.

1. The Genetics of Micro-Organisms, by D. G. Catcheside. Pitman Publishing Corporation, New York, 1951. 223 pages. Cloth. $4.50.
2. The Specialties in General Practice. Edited by Russell L. Cecil, M.D. W. B. Saunders Company, Philadelphia and London. 1951. 818 pages. Cloth. $14.50.
3. Antibiotic Therapy by Henry Welch, M.D.; Charles N. Lewis, M.D. and Chester S. Keefer, M.D. The Arundel Press, Inc. Washington, D.C. 1951. 562 pages. Cloth. $10.
   Dith a Section on Surgery by James M.
4. The Thyroid. By Thomas Hodge McGavack, with a section on Surgery by James W. Windfield and Walter L. Mersheimer, and a Section on History by Dorothy B. Spear, and Thomas Hodge McGavack. St. Louis. The C. V. Mosby Company. 1951. 646 pages. Cloth. $13.50.

Wyamine Sulfate — Mephentermine Sulfate. The formula is N-methylphenyl-tertiary-butylamine. Wyamine is a new vasconstrictor drug. It produces a temporary rise in blood pressure when the latter is depressed as a shock following coronary thrombosis or occurring during surgical procedures. There are no absolute contra-indications to the use of this drug. However, in cases of hemorrhage, the increase in blood pressure may aggravate bleeding.
Wyeth, Inc., Philadelphia, Pennsylvania.

"Bacimycin". Combined antibiotic ointment. A combination of bacitracin and neomycin.
Indications: topical treatment for most skin infections, minor abrasions and wounds.
Walker Laboratories, Inc., Mount Vernon, New York.

Dicalets — Multi-vitamin and mineral tablets containing vitamin A, B complex, D. C., B_{12}, folic acid, iron, calcium, phosphorous, cobalt, copper, iodine, magnesium, manganese, potassium and zinc. Indications, pregnancy and lactation.
Abbott Laboratories, North Chicago, Ill.

Theominal M — contains only 15 mg. of luminal as compared with 32 mg. and theominal. The effect of theobromine is to produce peripheral arterial dilitation; luminal relaxes vascular spasms and nervous excitement.
Indications: arteriosclerosis, angina pectoris, arterial hypertension and climacteric disorders.
Winthrop-Stearns Inc., New York, New York.

Hedulin. (2 - phenylindane - 1, 3 - dione) An oral anticoagulant in tablet form which rapidly lowers prothrombin activity of blood.
Indications: Effective in prophylaxis and treatment of intravascular clotting. Useful in thromboembolic disease, including thrombophlebitis, pulmonary embolism, phlebothrombosis, coronary, aortic, cerebral, postpartum and postoperative thrombosis. Initial dosage, 200 to 300 mg. Maintenance dose, 50 to 100 mg. daily.
Hed Pharmaceuticals, Inc., New Rochelle, New York.

Somnadex: each tablet contains: pentobarbital sodium, 60 mg., butabarbital, 30 mg., d-Desoxyephedrine hydrochloride 5 mg.
Indication: insomnia due to anxiety, tension, etc., and chronic disorders where dependable hypnosis without secondary depression is desirable.
Central Pharmacal Company, Seymour, Indiana.

Fergon Compound Elixir. A nutritional supplement and hematinic, each teaspoonful (5 cc.) supplying therapeutic quantities of firrous gluconati and members of the vitamin B_{12} complex, including thiamine, riboflavin, phyridoxine and nicotinamide.
Indications: Treatment of anemias responding to oral vitamin B_{12}, including certain megaloblastic anemias of infancy and pregnancy and various macrocytic deficiencies like tropical and nontropical sprue.
Winthrop-Stearns, Inc., New York, New York.